Author Index to Volume 18

In this index are listed the names of authors and the titles of their articles and notes. Abstracts of papers read at meetings are generally not listed; however, they are indexed in the Analytic Subject Index. Those which are included in the Author Index are designated by the symbol (D). The symbol (L) after an entry signifies a Letter to the Editor.

Ainslie, D. S. Demonstration experiments in electromagnetic induction —519(D)

Akeley, Anna M. Review of A brief course in physics for home economics students-470

Allen, Myron S. Scoring device-394(D)

Allison, Samuel K. Arthur Jeffrey Dempster, 1886-1950-401

Alvarez, Luis W. Relative densities of sun and moon-468(L)

Alway, Clayton C. (see Maxwell, Howard N.)-192

Anderson, Roy S. Simple combination micromicroammeter and x-ray ionization chamber—119

Anderson, W. R. Meeting of the Chicago Section-393

Andrews, C. L. Introduction to polarization of electromagnetic waves -521(D)

Ashbee, R. W. (see Osterman, H. F.)-525(D)

Ballard, Stanley S. Preprofessional undergraduate curriculum in physics—355(D)

Barschall, H. H. Studies of nuclear energy levels with fast neutrons
-535

Barton, Vola P. Further comments on the concept of pressure—52(L) Bartunek, Paul F. Modification of Rayleigh's method of measuring surface tension—320

—Driver for the Calthrop resonance-pendulum—521(D)

Bell, Raymond M. Apparatus of historical interest—53(L)
Bender, David F. Meeting of the Southern California Section—393

Bender, David F. Meeting of the Southern California Section—393

—Lens considered as a prism of variable angle—393(D)

Benham, T. A. Some servo-mechanism principles—334(D)

Bennett, Robert B. Geiger counter for weak radiations—391(D)

Bergmann, Peter G. Review of From Euclid to Eddington—330

Beringer, Robert. Laboratory experiment on alpha-particle scattering

Berry, Chester R. Optical evaluation of molecular structure factors

-260

Beyer, Robert T. Radiation pressure in a sound wave-25

Bjorke, George. Inexpensive three-meter diffraction grating spectrograph—525(D)

Blackwood, Oswald. Differentiated physics courses at the University of Pittsburgh—526(D)

Blanker, Frederika. Chladni figures or vibrational design—337(D) Blüh, Otto. History of physics and the old humanism—308

Bockstahler, Lester I. Proceedings of the American Association of Physics Teachers: the Middletown meeting—517

Bollman, Vernon L. Competitive test for high school students in Southern California—113(L)

 ——Dynamical demonstration of f=R/2 for a concave spherical mirror—394(D): 400(L)

Boyer, Carl B. Kepler's explanation of the rainbow-360

Brady, James J. Reflection of microwaves from metal plate structures

—391(D)

Bray, Robert S. (see Gray, Dwight E.)-274

Brewington, G. P. Review of How to solve problems in general physics -403

——Physics section—American Society for Engineering Education —526

Brinker, Bernard L. Preparing rods for stroking (Kundt's tube)—526(D)

----Preparing rods for stroking in the Kundt's tube experiment--579(L)

Brown, Sanborn C. Caloric theory of heat-367

Brown, Jr., William Fuller. Pronunciation of electricity—114(L)

Bruner, H. D., Arthur Roe, and F. T. Rogers, Jr. New radioisotope laboratory of the University of North Carolina—264

Burns, G. Preston. Simple pendulum-468(L); 520(D)

Bushkovitch, A. V. Criticism of the contemporary physics textbook—312; 336(D)

Butler, Alfred B. First electrical experiment in sophomore physics—524(D)

Cade, R. Larmor's theorem in quantum mechanics-114(L)

Caswell, A. E. Physics then and now-525(D)

Chew, Geoffrey F. and Burton J. Moyer. High energy accelerators at the University of California Radiation Laboratory—125

Christensen, F. E. Wilson cloud chamber-149

----Calcite crystal model--161

Cinnamon, C. A. Meeting of the Colorado-Wyoming Section-523

Clark, W. P. Meeting of the Wisconsin Section-430

Cochran, L. W. Meeting of the Kentucky Section-318

Coffman, Moody L. Is frequency more fundamental than wavelength?

—398(L)

Cohen, I. Bernard. Sense of history in science-343

Cohen, Robert S. Physical ideas, their content, logic, and social contexts in the education of humanities majors at Wesleyan University— 520(D); 570

Constantinides, Philip A. Meeting of the Chicago Section-227

-Quantitative experiment on rotational motion-463

Cook, C. Sharp and George E. Owen. Allowed beta-spectrum—453 Cornog, I. Clyde. New application: electronic time-delay circuit—62 Corrsin, S. Derivation of Euler's equation for the motion of an inviscid fluid—467(L).

Crawford, F. H. New design of optical bench for lecture and laboratory —228(D)

----Use of curve differentials in thermodynamics--521(D)

Crew, William H. (see White, Marsh W.)—487
Cunningham, W. J. Experiment with a nonlinear negative-resistance oscillator—208

——Experiment with an oscillating circuit having varying capacitance —314

-Review of Matrix analysis of electric networks-329

Davies, R. O. and J. S. Dugdale. Calculation of work in elementary thermodynamics—576

Davis, Kenneth E. Angular dependence of inelastically scattered protons from Be⁹—391(D)

Day, John A. Meteorological aspects of the fluorine problem—524(D) Decker, Fred W. Meetings of the Oregon Section—227, 391; 523

Dennison, David M. Review of Introduction to statistical mechanics—53 Dickinson, B. H. and Robert H. Noble. Physics-mathematics building at Michigan State College—378

Dodd, Laurence Elisworth. Lecture notebooks-236(L)

---Elasticity of glass-398(L)

Dugdale, J. S. (see Davies, R. O.)-576

DuMond, Jesse W. M. Review of Crystals and x-rays—325

Dunning, Gordon M. Need for an improved program of training high school physics teachers—525(D)

Eaton, V. E. Demonstration gyroscope-334(D)

Edwards, R. L. Velocity of a projectile by direct measurement; resolution of velocities—576

Eisner, Leonard. Nodal slide of flexible design for a course in intermediate optics—333(D)

Eldridge, John A. Electric and gravitational proportionality constants—579(L)

Ellickson, Raymond T. Review of Introduction to theoretical and experimental optics-230

---Scattering of elementary particles by nuclei-391(D)

---(see Niven, Ivan)-516

Author Index to Volume 18

In this index are listed the names of authors and the titles of their articles and notes. Abstracts of papers read at meetings are generally not listed; however, they are indexed in the Analytic Subject Index. Those which are included in the Author Index are designated by the symbol (D). The symbol (L) after an entry signifies a Letter to the Editor.

Ainslie, D. S. Demonstration experiments in electromagnetic induction —519(D)

Akeley, Anna M. Review of A brief course in physics for home economics students-470

Allen, Myron S. Scoring device-394(D)

Allison, Samuel K. Arthur Jeffrey Dempster, 1886-1950-401

Alvarez, Luis W. Relative densities of sun and moon-468(L)

Alway, Clayton C. (see Maxwell, Howard N.)-192

Anderson, Roy S. Simple combination micromicroammeter and x-ray ionization chamber—119

Anderson, W. R. Meeting of the Chicago Section-393

Andrews, C. L. Introduction to polarization of electromagnetic waves -521(D)

Ashbee, R. W. (see Osterman, H. F.)-525(D)

Ballard, Stanley S. Preprofessional undergraduate curriculum in physics—355(D)

Barschall, H. H. Studies of nuclear energy levels with fast neutrons
-535

Barton, Vola P. Further comments on the concept of pressure—52(L) Bartunek, Paul F. Modification of Rayleigh's method of measuring surface tension—320

—Driver for the Calthrop resonance-pendulum—521(D)

Bell, Raymond M. Apparatus of historical interest—53(L)
Bender, David F. Meeting of the Southern California Section—393

Bender, David F. Meeting of the Southern California Section—393

—Lens considered as a prism of variable angle—393(D)

Benham, T. A. Some servo-mechanism principles—334(D)

Bennett, Robert B. Geiger counter for weak radiations—391(D)

Bergmann, Peter G. Review of From Euclid to Eddington—330

Beringer, Robert. Laboratory experiment on alpha-particle scattering

Berry, Chester R. Optical evaluation of molecular structure factors

-260

Beyer, Robert T. Radiation pressure in a sound wave-25

Bjorke, George. Inexpensive three-meter diffraction grating spectrograph—525(D)

Blackwood, Oswald. Differentiated physics courses at the University of Pittsburgh—526(D)

Blanker, Frederika. Chladni figures or vibrational design—337(D) Blüh, Otto. History of physics and the old humanism—308

Bockstahler, Lester I. Proceedings of the American Association of Physics Teachers: the Middletown meeting—517

Bollman, Vernon L. Competitive test for high school students in Southern California—113(L)

 ——Dynamical demonstration of f=R/2 for a concave spherical mirror—394(D): 400(L)

Boyer, Carl B. Kepler's explanation of the rainbow-360

Brady, James J. Reflection of microwaves from metal plate structures

—391(D)

Bray, Robert S. (see Gray, Dwight E.)-274

Brewington, G. P. Review of How to solve problems in general physics -403

——Physics section—American Society for Engineering Education —526

Brinker, Bernard L. Preparing rods for stroking (Kundt's tube)—526(D)

----Preparing rods for stroking in the Kundt's tube experiment--579(L)

Brown, Sanborn C. Caloric theory of heat-367

Brown, Jr., William Fuller. Pronunciation of electricity—114(L)

Bruner, H. D., Arthur Roe, and F. T. Rogers, Jr. New radioisotope laboratory of the University of North Carolina—264

Burns, G. Preston. Simple pendulum-468(L); 520(D)

Bushkovitch, A. V. Criticism of the contemporary physics textbook—312; 336(D)

Butler, Alfred B. First electrical experiment in sophomore physics—524(D)

Cade, R. Larmor's theorem in quantum mechanics-114(L)

Caswell, A. E. Physics then and now-525(D)

Chew, Geoffrey F. and Burton J. Moyer. High energy accelerators at the University of California Radiation Laboratory—125

Christensen, F. E. Wilson cloud chamber-149

----Calcite crystal model--161

Cinnamon, C. A. Meeting of the Colorado-Wyoming Section-523

Clark, W. P. Meeting of the Wisconsin Section-430

Cochran, L. W. Meeting of the Kentucky Section-318

Coffman, Moody L. Is frequency more fundamental than wavelength?

—398(L)

Cohen, I. Bernard. Sense of history in science-343

Cohen, Robert S. Physical ideas, their content, logic, and social contexts in the education of humanities majors at Wesleyan University— 520(D); 570

Constantinides, Philip A. Meeting of the Chicago Section-227

-Quantitative experiment on rotational motion-463

Cook, C. Sharp and George E. Owen. Allowed beta-spectrum—453 Cornog, I. Clyde. New application: electronic time-delay circuit—62 Corrsin, S. Derivation of Euler's equation for the motion of an inviscid fluid—467(L).

Crawford, F. H. New design of optical bench for lecture and laboratory —228(D)

----Use of curve differentials in thermodynamics--521(D)

Crew, William H. (see White, Marsh W.)—487
Cunningham, W. J. Experiment with a nonlinear negative-resistance oscillator—208

——Experiment with an oscillating circuit having varying capacitance —314

-Review of Matrix analysis of electric networks-329

Davies, R. O. and J. S. Dugdale. Calculation of work in elementary thermodynamics—576

Davis, Kenneth E. Angular dependence of inelastically scattered protons from Be⁹—391(D)

Day, John A. Meteorological aspects of the fluorine problem—524(D) Decker, Fred W. Meetings of the Oregon Section—227, 391; 523

Dennison, David M. Review of Introduction to statistical mechanics—53 Dickinson, B. H. and Robert H. Noble. Physics-mathematics building at Michigan State College—378

Dodd, Laurence Elisworth. Lecture notebooks-236(L)

---Elasticity of glass-398(L)

Dugdale, J. S. (see Davies, R. O.)-576

DuMond, Jesse W. M. Review of Crystals and x-rays—325

Dunning, Gordon M. Need for an improved program of training high school physics teachers—525(D)

Eaton, V. E. Demonstration gyroscope-334(D)

Edwards, R. L. Velocity of a projectile by direct measurement; resolution of velocities—576

Eisner, Leonard. Nodal slide of flexible design for a course in intermediate optics—333(D)

Eldridge, John A. Electric and gravitational proportionality constants—579(L)

Ellickson, Raymond T. Review of Introduction to theoretical and experimental optics-230

---Scattering of elementary particles by nuclei-391(D)

---(see Niven, Ivan)-516

Ellis, Joseph W. Wiener's experiment: stationary or progressive waves?

Elvey. C. T. Progress in studies of the airglow in upper air research-431

Fairbank, William M. Elementary lecture demonstration with microwaves-521(D)

Falkoff, David L. Exchange forces-30

-Review of Introduction to theoretical physics-527

Fitzsimmons, K. E. Laboratory techniques for seniors in physics-\$24(T))

Fleisher, Harold and Leonard O. Olsen. Significant figures in the general physics course-51(L)

Fleischman, Lionel. Capacitor-resistor circuit-50

Forster, George. Education?-or merely training?! VII. An analysis and an interpretation of corollary I of Newton's laws of motion-394(D)

Fulbright, H. W. Uses of television techniques in demonstration

Gale, Grant O. Review of Electrical resistance strain gauges-117 -Induction kilowatt-hour meter-388

Gardner, M. E. Vector cross product in elementary electrodynamics -110

Gerhard, S. L. Slugging out a case for the pounders-302

Germain, L. S. Mass of the meson-524(D)

Getkso, Joseph. (see Hickman, Joseph W.)-233

Gladden, Sanford C. Experiment of Malus' law for the elementary laboratory-395

Goeder, Frank P. and Louis R. Weber. Adaptation of war surplus equipment to laboratory use-333(D)

Graves, W. G. Graviton theory-522(D) Gray, Dwight E. Physics abstracting-417; 578(L)

and Robert S. Bray. Abstracting and indexing services of physics interest-274

Grebe, John J. Review of Constructive uses of atomic energy-329

Guest, P. G. Fitting of a straight line by the method of grouping-324 (L)

Haden, Harley J. Oil well logging-394(D)

Hanau, Richard. Meeting of the Kentucky Section-392

Harling, Reginald T. Review of Physics-529

-Review of Physical constants-531

Harrington, E. L. Present trends of university courses in general physics for premedical students-336(D); 428

Harvalik, Zaboi V. Electronic magnifier for observation of infra-red and ultraviolet-151

Henshaw, Clement L. Do students find history interesting in physical science courses?-373

Henshaw, R. A. Simple harmonic motion demonstrator-395

Herrey, Erna M. J. Review of Elementary modern physics-231

Hickman, Joseph W. and Joseph Getkso. Metal crystal goniometer -233

Hill, A. G. Meeting of the New England Section, American Physical Society-228

Hill, E. L. John Torrence Tate, 1889-1950-402

Hill, Harry. Physics laboratory arts; an undergraduate course-526(D) Hino, Jun and George Sandoz. Demonstration unit for magnetostric-

tion-515 Hinshaw, R. A. Simple harmonic motion demonstrator-395

Hirsh, Jr., F. R. Floyd K. Richtmyer, 1881-1939, scientist, teacher. friend-394(D)

Holm, Gustave R. Dimensional structure of the electromagnetic field _500

Holmes, Eugene C. Main philosophical considerations of space and time-560

Ingles, A. R. Measurement of the specific heat of liquids by cooling in an air stream-194

Ising, Ernest. Goethe as a physicist-235(L)

Ivey, Hugh. Damped electrical oscillation demonstrated with a cathoderay oscilloscope-400(L)

Katz, Robert. Simple experiment on heat-534(L)

Keller, Robert J. (see Kruglak, Haym)-140

Kelley, James B. Extended Bernoulli equation-202; 467(L) Kelly, W. C. Curricula for physics majors-335(D)

Kikuchi, Chihiro. (see Yukawa, Hideki)-154

and R. D. Spence. Microwave methods in physics. II. Microwave absorption in paramagnetic substances-167

-Review of Trilinear chart of nuclear species-403

Kington, Leason K. (See Klaiber, G. Stanley)-397

Kinsey, W. H. and R. A. Rhodes II. Laboratory examination for general college physics-519(D)

Kirkpatrick, Paul. Address of recommendation of Professor Orrin Harold Smith for the 1949 Oersted Medal for notable contributions to the teaching of physics-254

-Modernizing the constitution and by-laws-323(L)

Klaiber, G. Stanley and Leason K. Kington. Simple electronic spark timer-397

Klopsteg, Paul E. Annual report of the Treasurer-338

Knauss, Harold P. Hydrodynamic model of radioactive decay-521(D) Knight, W. D. and R. F. McCune. Graphical method for determining galvanometer characteristics-520(D)

Knowlton, A. A. Review of Out of my later years-469

Kozora, Andrew J. Meeting of the Western Pennsylvania Section-318 Kruglak, Haym. Conversion charts-321(L)

and Robert J. Keller. Prediction of achievement in sophomore engineering physics at the University of Minnesota-140

Kyle, Garland D. Factor analysis and tests of hypotheses concerning ability in physics-337(D)

Lacount, Reginald G. Objective tests-238(L)

Langer, Lawrence M. Review of Introduction to atomic physics-231 Lee, J. C. Review of Measurements of radioactivity-584

Little, Edward M. Rope trick: energy vs. momentum method-579

Little, Noel C. Unified approach to physics-335(D)

Loomis, Dwight. Directional broadcasting antennas-392(D)

Lorentz, Lilly. (see Mohler, Nora M.)-520(D) Loring, Ralph A. Student spectrometer from surplus equipment-

Lovell. Donald J. Principles of colorimetry-104

Mackay, R. Stuart, Dynamic demonstration of nitrogen afterglow-319 Manning, Kenneth V. Demonstration of the oscillatory discharge of a condenser_333(D) Maxwell, Howard N. and Clayton C. Alway. Determination of the speed

of sound in air-192 McCarthy, John J. World trends in the publication of physical research

1938-1948-336(D)

McCarthy, J. T. Use of WWV signals to time pendulums-306

McCormick, W. W. Neglected recitation-205 -Review of How to study physics-584

McCune, R. F. (see Knight, W. D.)-520(D)

Menger, Karl. Mathematics of elementary thermodynamics-89

Michels, Walter C. Review of Joseph Henry his life and his work-528 Miller, Julius Sumner. Device for showing vectors in space-115(L)

-Concerning historical references in general physics-115(L) Elementary demonstration on the incompressibility of water and the elasticity of glass-164(L)

-Resonant response of a tuning fork-164(L)

-Extension of a Hooke's law experiment-235(L) 'r

Energy density in a gravitational field-237(L)

-Freezing water by evaporation-a remarkable situation-238(L)

Demonstration of beats and the Doppler effect-400(L)

-Extensions of the elementary laboratory experiment on simple harmonic motion-465

-Old problems stated anew-534(L)

-Some observations on Chladni figures-534(L)

Misener, A. D. Type of examination in physics-396

Mitchell, H. Rees. Demonstrations of acceleration-516

Mohler, Nora M. and Lilly Lorentz. Elementary physics experiments for premedical students-520(D) Molby, F. A. Some musings of an ex-lab instructor-525(D)

Moore, W. Cullen. Mechanical demonstrator for Fermat's principle -333(D)

Moyer, Burton J. (see Chew, Geoffrey F.)-125

Mueser, Roland E. What the student thinks-157

Nelson, M. E. and M. L. Pool. Reactions leading to Fess, Mn57, and

Niven, Ivan and R. T. Ellickson. Note on the path of a projectile -516

Noble, Robert H. (see Dickinson, B. H.)—378 Norris, Will V. Architectural physics—300; 334(D)

O'Leary, Austin J. Enthalpy and thermal transfer-213; 336(D)

Olsen, Leonard O. (see Fleisher, Harold)-51(L)

Osgood, Thomas H. Report of the Editor for the year 1949—339
Osterman, H. F., R. W. Ashbee, and C. Williamson. Phototube-controlled slave flashgun—525(D)

Owen, George E. (see Cook, C. Sharp)-453

Pake, George E. Fundamentals of nuclear magnetic resonance absorption—part I—438; part II—473

Parker, Floyd W. Laboratory experiment on trajectories-64

Parkinson, W. C. Review of The cylotron- 528

Paton, R. F. Report of the Secretary-337

Payne, W. T. Review of Basic theories of physics: mechanics and electrodynamics—228

----Review of The metre-kilogram-second system of electrical units---531

----Review of Dipole moments-532

----Review of The general principles of quantum theory-584

Pearson, Stanley C. More paper for physics teachers—394(D) Pietsch, LeRoy. Maxwell's equations, not again!—468(L)

Pinkston, E. R. Meeting of the Chesapeake Section—393

Pomerance, H. and D. Terranova. Isotope shifts in the Balmer spectrum of tritium—466

Pool, M. L. (see Nelson, M. E.)-227(D)

Power, A. D. Derivation of thermal emittance equation—147; 336(D) Preston, Glenn W. Interaction between magnetized spheroids in

permeable fluid media—136

Pruett, J. Hugh. Lost Port Orford meteorite—524(D)

Purbrick, Robert L. Mercury-indium molecule-391

Randall, Robert H. Acoustics: a neglected undergraduate subject—

Reinertsen, R. W. Astigmatic lenses-227(D)

Rhodes II, R. A. (see Kinsey, W. H.)-519(D)

Richards, D. A. Damped harmonic motion—222

Ridenour, Louis N. Review of Live with lightning-470

Riggs, Cecil O. Mirage, or regular reflection?—526(D)

Rinehart, John S. Impact problems-116(L)

——Demonstration of specific acoustic resistance—546

Ritland, Harold. Small angle x-ray scattering-524(D)

Rix, H. D. Fresnel diffraction demonstrated with a ripple tank-334(D)

Robinson, Jack H. Experiments for the elementary laboratory-323

Roe, Arthur (see Bruner, H. D.)-264

Rogers, Eric M. Three demonstration experiments-333(D)

Rogers, Jr., F. T. (see Bruner, H. D.)-264

Rusk, Rogers D. Review of Scientific autobiography and other papers -117

-Training of college physics teachers-183

Saby, John S. Teaching alternating current circuits-321(L)

----Teaching a.c. circuits-a rejoinder-582(L)

Samuelson, A. G. Textbook errors on thermocouples- 557

Sandoz, George. (see Hino, Jun)-515

Satterly, John. Again Maxwell's equation-235(L)

---Some experiments in dynamics, chiefly on vibrations-405

Schepler, Herman C. Development of an aspheric lens surface—385 Schilling, Harold K. Preparation of college physics teachers at The Pennsylvania State College—549

Schlegel, Richard. Review of Albert Einstein; his work and its influence on our world—327

--- Optical refraction and Fermat's principle-333(D)

-Review of Cosmological theory-531

Schoepfle, G. K. Foreign language for the undergraduate—335(D)

- Foreign language for the physics student-464

Schultz, H. L. and W. G. Wadey. Laboratory course in electronics—522(D)

Schweinler, H. C. Review of Elementary pile theory-403

Seren, Leo. Considerations on the two-body collision problem using relativistic mechanics—227(D)

——Can religion be brought into the physics classroom?—392(D) Shaw, Robert S. Illustrated definitions—337(D)

Sidhu, S. S. Review of The crystalline state—330

Simon, A. W. Proof of Varignon's theorem for coplanar force systems

Skogen, Nils. Simple derivation of the formula for the mean collision number of molecules on a wall—320

Smith, Orrin H. Experience plus relization-256

Smithson, J. R. Michelson at Annapolis—425

Snyder, James N. On the changing status of mesons-41

Spence, R. D. (see Kikuchi, C.)-167

Steinhart, Victor. Errors in the history of science-399(L)

Stewart, John Q. Development of social physics-239

Stickley, A. R. Does pressure have direction?-322(L)

Strong, Foster. Meeting of the Southern California Section-165

Suits, C. G. Physics in industry-55

Taub, A. H. Review of Meaning of relativity-403

Terranova, D. (see Pomerance, H.)-466

Thomson, Earl W. Confetti and turbulence—39 Tobey, A. R. Chronology of modern physics—525(D)

Tsai, Chi-Ching. Simple method for fastening a rubber membrane to a glass bell-233

Vallese, Lucio M. Review of Electronics: experimental techniques—229
—Transient analysis by a generalized symbolic method—522(D)

Van Vleck, J. H. Landmarks in the theory of magnetism-495

Wack, Paul E. Electrical conductivity of conducting rubbers-227(D)

Wadey, W. G. (see Schultz, H. L.)-522(D)

Walerstein, I. Review of University physics-530
Walker, M. J. Review of Vector and tensor analysis-583

Wangsness, Roald K. Nuclear magnetic resonance as an advanced laboratory experiment—521(D)

Warren, R. E. Meeting of the Western Pennsylvania Section-525

Watson, Bernard B. Current trends in the training of college teachers —553

Watson, E. C. Review of Some early tools of American science-583

Webb, William S. Review of Science and civilisation—327 Weber, Louis R. (see Goeder, Frank P.)—333(D)

——Physics instructor in the laboratory—335(D)

Wehr, M. R. Joseph Razek, 1899-1950-273

Wells, Charles P. Review of Giant brains-230

White, Marsh W. and William H. Crew. Physicists in and following World War II—487

Williams, Jr., A. O. Experiment on dynamics of impact-199

William, E. Allan. General relation between phase and group velocities as illustrated by water waves—394(D)

Williams, P. W. Atwood's machine from Behr apparatus-237(L)

Williamson, C. (see Osterman, H. F.)-525(D)

Winans, J. G. Teaching alternating current circuits-581(L)

Worthing, A. G. Nomenclature policy in radiometry and photometry

Yukawa, Hideki and Chihiro Kikuchi. Birth of the meson theory-154

Analytic Subject Index to Volume 18

The titles of articles are disregarded, the entries being based on analyses of the contents of the articles. The symbol (D) designates a digest of an article or an abstract of a paper read at a meeting; (T) designates title only and (L) designates a Letter to the Editor.

To facilitate reference to any desired subject, the index is divided into sections arranged alphabetically. The titles of these sections and of cross references to them are as follows:

Accelerators

Aerophysics

American Association of Physics Teachers

American Physical Society

Apparatus Biographies

Biophysics Cosmography

Cosmography

Demonstrations

Departmental administration, maintenance, and activities

and activities

Education, physics and science

Electricity and magnetism Employment of physicists Experiments

General education

General physics, education aspects

General physics, instructional techniques Heat and thermodynamics

Heat and thermodynami History and biography

Industrial and government research

Laboratory arts and techniques

Laboratory organization

Language Light Mathematics

Mechanics

Mesons Modern physics Nuclear physics

Philosophy of science Properties of matter

Radio and television

Reports, announcements, and news

Rockets

Secondary-school physics

Social and economic aspects of science

Sound

Teacher training

Testing, theory and techniques

Textbooks

Units, dimensions, and terminology

Visual materials and methods

Accelerators

Accelerators of nuclear particles, John S. Streib-526(T)

High energy accelerators at the University of California Radiation Laboratory, Geoffrey F. Chew and Burton J. Mover—125

Aerophysics

Atmospheric twinkle studies in motion pictures, C. P. Butler—393(T) Electromagnetic radiation and weather activity, Ralph H. Beter—410(T)

Meteorological aspects of the fluorine problem, John A. Day-

Progress in studies of the airglow in upper air research, C. T. Elvey—431

American Association of Physics Teachers

American Association of Physics Teachers summer meeting—253
Meeting at Middletown, Connecticut. June 20–22, 1950, Lester I.

Bockstahler—517; program and abstracts—519; registration—522 Meeting at New York, February 2–3–4, 1950: program and abstracts —322; secretary's report, R. F. Paton—337; treasurer's report, Paul E. Klopsteg—338; editor's report, Thomas H. Osgood—339

Modernizing the constitution and by-laws, Paul Kirkpatrick—323(L) Modernizing the constitution of the Association, Paul Kirkpatrick—323(T)

Necrology: Joseph Razek, 1899–1950—273; Arthur Jeffrey Dempster, 1886–1950—401; John Torrence Tate, 1889–1950—402

New members of the association—118; 165; 340; 471; 532; 585

Oersted Medal for 1949 to Professor Orrin Harold Smith: Address of recommendation by Paul Kirkpatrick—254; Experience plus realization, Orrin H. Smith—256, 332(T); Presentation of the Oersted Medal of the American Association of Physics Teachers to Professor Orrin Harold Smith, Paul Kirkpatrick and J. W. Buchta—332(T)

Report of the Coulomb's Law Committee of the American Association of Physics Teachers—153

Richtmyer Memorial Lecture—Landmarks in the theory of magnetism, J. H. Van Vleck—332(T); 495

Section news: Chesapeake, E. R. Pinkston—393; Chicago, Philip A. Constantinides—227, W. R. Anderson—393; Colorado-Wyoming. C. A. Cinnamon—523; Kentucky, L. W. Cochran—318, Richard Hanau—392; Oregon, Fred W. Decker—227, 391, 523; Southern California, Foster Strong—165, David F. Bender—393; Western Pennsylvania, Andrew J. Kozora—318, R. E. Warren—525; Wisconsin, W. P. Clark—430

Summer meeting of the American Association of Physics Teachers, Wesleyan University, Middletown, Connecticut, June 20-21-22, 1950-191 Teaching of electricity and magnetism at the college level, Report of the Coulomb's Law Committee of the A.A.P.T. I. Logical standards and critical issues—1; II. Two outlines for teachers—69; Errata—88; Reprints—437

Taylor memorial manual of advanced undergraduate laboratory experiments, T. B. Brown—519(T)

American Physical Society

Address of the retiring president—Can physics serve two masters? F. W. Loomis—332(T)

Section news: New England, A. G. Hill-228

Apparatus

589

Amplifiers for cathode ray oscilloscopes, Howard Vollum-525(T)

Apparatus for demonstrating and mapping an electric field, Rev. B. Brinker—318(T)

Apparatus for determining the expansivity of mercury, B. H. Dickinson—165(T)

Atwood's machine from Behr apparatus, P. W. Williams—237(L)

Calcite crystal model, F. E. Christensen-161

Cold cathode mercury arc, Paul L. Copeland—462(T) Demonstration gyroscope, V. E. Eaton—334(D)

Demonstration unit for magnetostriction, Jun Hino and George

Sandoz—515
Design and construction of an air-cooled electromagnet, Arthur

Luck—392(T)

Driver for the Calthrop resonance-pendulum, Paul F. Bartunek—

521(D)

Electronic magnifier for observation of infra-red and ultraviolet, Zaboj V. Harvalik—151

Geiger counter for weak radiations, Robert B. Bennett—391(D) Geiger counters, J. L. Duranz or Edward Reibel—430(T)

Induction kilowatt-hour meter, Grant O. Gale-388

Inexpensive three-meter diffraction grating spectrograph, George Bjorke—525(D)

Lecture-room optical disk, H. E. Carr, W. T. Fenhagen, and J. R. Smithson—393(T)

Metal crystal goniometer, Joseph W. Hickman and Joseph Getkso-233

New design of optical bench for lecture and laboratory, F. H. Crawford—228(D)

Nodal slide of flexible design for a course in intermediate optics, Leonard Eisner—333(D)

Photomultiplier tubes as scintillation counters, T. Scolman and R. R. Palmer—430(T)

Projection timer, R. A. Goodwin and W. T. Fenhagen—393(T) Rangefinder using the eyes as objectives, Harley J. Haden—165(T)

Simple combination micromicroammeter and x-ray ionization chamber, Roy S. Anderson—119

Simple electronic spark timer, G. Stanley Klaiber and Leason K. Kington—397

Some servo-mechanism principles. T. A. Benham—334(D) Steinheil spectroscope of 65 years ago, Howard Long—318(T) Student spectrometer from surplus equipment, Ralph A. Loring—

519(D)

Two simple pieces of apparatus for the general physics course: a refractometer and practice switchboard, J. Bradford—430(T)

Vacuum tube electrometer for student use, Robert O. Bock—523(T)

Vacuum tube electrometer for student use, Robert O. Bock—523(1) Vapor pressure-temperature apparatus, R. L. Judkins—392(T) Various applications of the multiplier photocell, L. D. Fallon—318(T) Wilson cloud chamber, F. E. Christensen—149

Biographies

Birth of the meson theory, Hideki Yukawa and Chihiro Kikuchi

Floyd K. Richtmyer, 1881-1939, scientist, teacher, friend, F. R. Hirsh, Jr.—394(D)

Goethe as a physicist, Ernest Ising-235(L)

Kepler and the theory of the rainbow, Carl B. Boyer—332(T) Kepler's explanation of the rainbow, Carl B. Boyer—360

Kepler's explanation of the rainbow, Carl B. Boyer—360 Lectures of Professor Robert Pohl of Göttingen, E. W. Caspari—519(T)

Lectures of the late Professor Benjamin Snow, J. C. Blankenagel-

Michelson at Annapolis, I. R. Smithson-425

Biophysics

Elementary physics applied to medical problems, Robert H. Esling— 392(T)

Paleotemperatures of the cretaceous, Harold C. Urey—462(T) Some problems in radiation biology, Robbert L. Sinsheimer—462(T)

Cosmography

Age of the universe, A. E. Whitford—430(T)

Hydrodynamics in cosmic physics, Edward Teller-462(T)

Lost Port Orford meteorite, J. Hugh Pruett-524(D)

Relative densities of sun and moon, Luis W. Alvarez—468(L) Some chemical evidence relative to the origin of the earth, Harold C. Lirev—462(T)

Courses

Architectural physics, Will V. Norris-300; 334(D)

Curricula for physics majors, W. C. Kelly-335(D)

Curriculum in physics at the University of Chicago, Harold R. Vorhees—393(T)

Curriculum trends in the physical sciences at the University of Chicago, James B. Parsons—393(T)

Differentiated physics courses at the University of Pittsburgh, Oswald Blackwood—526(D)

First year of two-year science program at Amherst College, Theodore Soller—519(T)

Intensive study schedules, Gilbert Myers-394(T)

Laboratory course in electronics, H. L. Schultz and W. G. Wadey—522(D)

Nature and objectives of the physics program at Carroll College, V. P. Batha-430(T)

Physics laboratory arts; an undergraduate course, Harry Hill—526(D)
Preprofessional undergraduate curriculum in physics, Stanley S,

Ballard—335(D)
Present trends of university courses in general physics for premedical

students, E. L. Harrington—336(D); 428
Second year physics course for biology and premedical students,

L. L. Barnes—519(T)

Some experiments in dynamics chiefly on vibrations John Satterly

Some experiments in dynamics, chiefly on vibrations, John Satterly —405

Demonstrations

Apparatus for demonstrating and mapping an electric field, Rev. B. Brinker—318(T)

Atoms demonstration, Staley and Shriner-318(T)

Damped electrical oscillation demonstrated with a cathode-ray oscilloscope, Hugh Ivey-400(L)

Demonstration experiments in electromagnetic induction, D. S. Ainslie—519(D)

Demonstration gyroscope, V. E. Eaton-334(D)

Demonstration lecture, V. E. Eaton-519(T)

Demonstration lecture as an art: introductory remarks, R. M. Sutton—519(T)

Demonstration of beats and the Doppler effect, Julius Sumner Miller -400(L)

Demonstration of the oscillatory discharge of a condenser, Kenneth V. Manning—333(D)

Demonstration: Soap bubble model of crystal structure, F. C. Moesel —165(T)

Demonstration unit for magnetostriction, Jun Hino and George Sandoz-515

Demonstrations of acceleration, H. Rees Mitchell-516

Dynamic demonstration of nitrogen afterglow, R. Stuart MacKay -319

Dynamical demonstration of f=R/2 for a concave spherical mirror, Vernon L. Bollman—394(D); 400(L)

Elementary demonstration on the incompressibility of water and the elasticity of glass, Julius Sumner Miller—164(L)

Elementary lecture demonstration with microwaves, William M. Fairbank—521(D)

Fresnel diffraction demonstrated with a ripple tank, H. D. Rix-334(D)

Lecture demonstration for the three types of magnetic substances, R. E. Trumble, Jr.—393(T)

Lecture room optical disk, H. E. Carr, W. T. Fenhagen, and J. R. Smithson—393(T)

Mechanical demonstrator for Fermat's principle, W. Cullen Moore —333(D)

Short demonstration experiments without words, Eric M. Rogers—520(T)

Simple harmonic motion demonstrator, R. A. Hinshaw—395 Ten demonstrations in piezoelectricity, K. S. Van Dyke—519(T)

Three demonstration experiments, Eric M. Rogers—333(D) Uses of television techniques in demonstration apparatus, H. W.

Fulbright—334(D)
What remains twenty years after a demonstration, L. I. Bockstahler

What remains twenty years after a demonstration, L. I. Bockstahler —519(T)

Department administration, maintenance, and activities (see Education, physics and science)

New radioisotope laboratory of the University of North Carolina, H. D. Bruner, Arthur Roe, and F. T. Rogers, Jr.—264

Physics-Mathematics Building at Michigan State College, B. H. Dickinson and Robert H. Noble—378

Education, physics and science

Analysis of laboratory instruction in physics, Smith E. Colwell-526(T)

Can religion be brought into the physics classroom? Leo Seren—392(D)

Education?—or merely training? VI.—Why continue teaching the parallelogram of forces principle? George Forster—165(T)

Education?—or merely training? VII. An analysis and an interpretation of corollary I of Newton's laws of motion, George Forster— 394(D)

Experience plus realization, Orrin H. Smith—256; 332(T) Old problems stated anew, Julius Sumner Miller—534(L)

Physics abstracting, Dwight E. Gray—417

Teaching by publication, L. W. McKeehan-518(T)

Teaching of electricity and magnetism at the college level, Report of of the Coulomb's Law Committee of the A.A.P.T. I. Logical standards and critical issues—1; II. Two outlines for teachers—69; Errata—88; Reprints—437

Statistical study of the undergraduate training of American scientists, Robert Knapp—519(T)

World trends in the publication of physical research 1938-1948. John J. McCarthy—336(D)

Electricity and magnetism

Amplifiers for cathode ray oscilloscopes, Howard Vollum—525(T) Capacitor-resistor circuit, Lionel Fleischmann—50 Cold cathode mercury arc, Paul L. Copeland-462(T)

Damped electrical oscillation demonstrated with a cathode-ray oscilloscope, Hugh Ivey-400(L)

Demonstration experiments in electromagnetic induction, D. S. Ainalie—519(D)

Demonstration of the oscillatory discharge of a condenser, Kenneth V. Manning-333(D)

Design and construction of an air-cooled electromagnet, Arthur Luck-392(T)

Dimensional structure of the electromagnetic field, Gustave R. Holm
-509
Electrical conductivity of conducting rubbers, Paul E. Wack-

227(D)
Electromagnetic radiation and weather activity, Ralph H. Beter

Electromagnetic radiation and weather activity, Ralph H. Beter —430(T)

Electromechanical properties of barium titanate, Hans Jaffe—519(T)

Electromechanical properties of barium titanate, Hans Jaffe—519(T) Electronic magnifier for observation of infra-red and ultraviolet, Zaboj V. Harvalik—151

Experiment with a nonlinear negative-resistance oscillator, W. J. Cunningham—208

Experiment with an oscillating circuit having varying capacitance, W. J. Cunningham—314

Field emission at large current densities, Walter P. Dyke and J. Kenneth Trolan—525(T)

Glow to arc transition, J. G. Winans-462(T)

Graphical method for determining galvanometer characteristics, W. D. Knight and R. F. McCune—520(D)

Induction kilowatt-hour meter, Grant O. Gale-388

Interaction between magnetized spheroids in permeable fluid media, Glenn W. Preston—136

Introduction to piezoelectricity, W. G. Cady-519(T)

Introduction to polarization of electromagnetic waves, C. L. Andrews —521(D)

Landmarks in the theory of magnetism, J. H. Van Vleck-332(T);

Literature of ferromagnetism, L. W. McKeehan-228(T)

Magnetism, L. R. Maxwell-393(T)

New application: electronic time-delay circuit, I. Clyde Cornog—62 Nonlinear circuits in junior electrical measurements, G. P. Brewington—165(T)

Recent advances in ferromagnetism, R. M. Bozorth-228(T)

Ten demonstrations in piezoelectricity, K. S. Van Dyke—519(T)

Thermal electromotive force, W. W. Sleator-392(T)

Transient analysis by a generalized symbolic method, Lucio M. Vallese—522(D)

Vector cross product in elementary electrodynamics, M. E. Gardner

Employment of physicists

Employment of physicists and mathematicians in industry, G. P. Brewington—526(T)

Physicists in and following world war II, Marsh W. White and William H. Crew—487

Summer student employment at Westinghouse, R. E. Warren-318(T)

Experiments

ın

Application of a simple method of measuring short time intervals, Frank G. Karioris—430(T)

Determination of g using electronic timing, Harald C. Jensen—393(T) Electron beam deflection experiment. L. Marton and I. A. Simpson

-393(T)
Elementary physics experiments for premedical students, Nora M.

Mohler and Lilly Lorentz—520(D)

Experiment on dynamics of impact, A. O. Williams, Jr.—199
Experiment on Malus' law for the elementary laboratory, Sanford C.

Gladden—395
Experiment with a nonlinear negative-resistance oscillator, W. J.
Cunningham—208

Experiment with an oscillating circuit having varying capacitance, W. J. Cunningham-314

Experiments for the elementary laboratory, Jack H. Robinson-323(L)

Experiments with one-fortieth farad capacitor units, Frank P. Goeder and Louis R. Weber—523(T)

Extension of a Hooke's law experiment, Julius Sumner Miller—235(L)

Extensions of the elementary laboratory experiment on simple harmonic motion, Julius Sumner Miller—465

First electrical experiment in sophomore physics, Alfred B. Butler —524(D)

Induction kilowatt-hour meter, Grant O. Gale-388

Laboratory experiment on alpha-particle scattering, Robert Beringer -521(D)

Laboratory experiment on the determination of gamma for gases by self-sustained oscillations, W. F. Koehler—393(T)

Laboratory experiment on trajectories, Floyd W. Parker-64

Modification of Rayleigh's method of measuring surface tension, Paul F. Bartunek—320

Nuclear magnetic resonance as an advanced laboratory experiment, Roald K. Wangsness—521(D)

Quantitative experiment on rotational motion, P. A. Constantinides —463

Reflectance of polarized light by direct method for the optics laboratory, Peter Jowise and John Phelps—523(T)

Simple experiment on heat, Robert Katz-534(L)

Some experiments in dynamics, chiefly on vibrations, John Satterly -405

Technique for taking data on the critical potentials of gases, Robert S. Bradford—523(T)

Two experiments on kinetic theory of gases for demonstration and advanced laboratory, E. G. Andresen—318(T)

Use of WWV signals to time pendulums, J. T. McCarthy—306 Velocity of a projectile by direct measurement; resolution of velocities, R. L. Edwards—576

Wiener's experiment: stationary or progressive waves? Joseph W. Ellis—161; 165(T)

General education (see Education, physics and science)

Do students find history interesting in physical science courses? Clement L. Henshaw—322(T); 373

Foreign language for the physics student, G. K. Schoepfle—464 Foreign language for the undergraduate, G. K. Schoepfle—335(D)

Physical ideas, their content, logic, and social contexts in the education of humanities majors at Wesleyan University, Robert S. Cohen—520(D); 570

Science in general education, W. P. Clark-430(T)

Should physics really play a fundamental role in a liberal education? Duane Roller—392(T)

Value of physics history to nonscience major students, Duane Roller —462(T)

What the student thinks, Roland E. Musser-157

General physics, educational aspects

Factor analysis and tests of hypotheses concerning ability in physics, Garland D. Kyle—337(D)

Prediction of achievement in sophomore engineering physics at the University of Minnesota, Haym Kruglak and Robert J. Keller —140

Unified approach to physics, Noel C. Little—335(D); Review by W. P. Gilbert—430(T)

General physics, instructional techniques

Concerning historical references in general physics, Julius Sumner Miller—115(L)

Gyroscope in elementary physics, E. F. Barker and P. F. Barker—392(T)

Laboratory techniques for seniors in physics, K. E. Fitzsimmons—524(D)

Lecture notebooks, Laurence E. Dodd-236(L)

Magnetic pole strength vs. magnetic moment in teaching magnetism, J. G. Winans—430(T)

Method of presenting equations of projectile motion, F. W. Parker —318(T)

Neglected recitation, W. W. McCormick-205

Old-time classroom recitation—can it be restored? Laurence E. Dodd -165(T)

Projects for physics majors, W. C. Kelly-318(T)

Significant figures in the general physics course, Harold Fleisher and Leonard O. Olsen—51(L)

Teaching a.c. circuits-a rejoinder, John S. Saby-582(L)

Teaching alternating current circuits, J. G. Winans-581(L)

Teaching alternating current circuits, John S. Sabv-321(L)

Teaching of the limit of resolution of telescopes, S. W. Harding-523(T)

Use of field tank in teaching electronics, T. B. Brown-393(T)

Heat and thermodynamics

Again Maxwell's equations, John Satterly-235(L)

Calculation of work in elementary thermodynamics, R. O. Davies and J. S. Dugdale-576

Caloric theory of heat, Sanborn C. Brown-332(T); 367

Derivation of thermal emittance equation, A. D. Power-147; 336(D) Enthalpy and thermal transfer, Austin J. O'Leary-213; 336(D)

Freezing water by evaporation-a remarkable situation, Julius Sumner Miller-238(L)

Mathematics of elementary thermodynamics, Karl Menger-89

Maxwell's equations, not again! LeRoy Pietsch-468(L)

Measurement of the specific heat of liquids by cooling in an air stream, A. R. Ingles-194

Simple experiment on heat, Robert Katz-534(L)

Thermodynamics, F. G. Brickwedde-393(T)

Use of curve differentials in thermodynamics, F. H. Crawford-521(D)

Value of absolute zero of temperature, Wallace R. Muelder-165(T) History and biography

Apparatus of historical interest, Raymond M. Bell-53(L)

Caloric theory of heat, Sanborn C. Brown-332(T); 367

Chronology of modern physics, A. R. Tobey-525(D)

Concerning historical references in general physics, Julius Sumner Miller-115(L)

Do students find history interesting in physical science courses? Clement L. Henshaw-332(T); 373

Errors in the history of science, Victor Steinhart-399(L)

History of physics and the old humanism, Otto Blüh-308

Physics then and now, A. E. Caswell-525(D)

Reminiscences of graduate school at Michigan, W. St. Peter-318(T) Sense of history, I. Bernard Cohen-332(T)

Sense of history in science, I. Bernard Cohen-343

Value of physics history to nonscience major students, Duane E. Roller-462(T)

Industrial and government research (see Education, physics and science)

Oil well logging, Harley J. Haden-394(D)

Physics in industry, C. G. Suits-55

Uses of the electron microscope in engineering, Oliver Row-526(T)

Laboratory arts and techniques

Adaptation of war surplus equipment to laboratory use. Frank P. Goeder and Louis R. Weber-333(D)

Quick determination of a dry cell condition, K. W. Saunders-392(T) Preparing rods for stroking in the Kundt's tube experiment, Bernard L. Brinker, O.S.B .- 579(L)

Preparing rods for stroking (Kundt's tube), Bernard L. Brinker, O.S.B.-526(D)

Simple method for fastening a rubber membrane to a glass bell, Chi-Ching Tsai-233

Use of WWV signals to time pendulums, J. T. McCarthy-306

Laboratory organization

Physics instructor in the laboratory, Louis R. Weber-335(D) Some musings of an ex-lab instructor, F. A. Molby-525(D)

Language

Pronunciation of electricity, William Fuller Brown, Jr.-114(L) Light (see Apparatus)

Astigmatic lenses, R. W. Reinertsen-227(D)

Color perception and color deficiencies, Z. V. Harvalik-462(T) Development of an aspheric lens surface, Herman C. Schepler-385 Dynamic demonstration of nitrogen afterglow, R. Stuart MacKay

Electronic magnifier for observation of infra-red and ultraviolet, Zaboj V. Harvalik-151

Fresnel diffraction demonstrated with a ripple tank, H. D. Rix-334(D)

Interference colors reflected by very thin films, Katharine B. Blodgett -462(T)

Is frequency more fundamental than wavelength? Moody L. Coffman -398(L)

Isotope shifts in the Balmer spectrum of tritium, H. Pomerance and D. Terranova-465

Lens considered as a prism of variable angle, David F. Bender-393(D) Mechanical demonstrator for Fermat's principle, W. Cullen Moore-

Mirage, or regular reflection? Cecil O. Riggs-526(D)

Nodal slide of flexible design for a course in intermediate optics, Leonard Eisner-333(T)

Nomenclature policy in radiometry and photometry, A. G. Worthing -162

Notes on the Michelson interferometer, R. A. Loring-318(T)

Optical properties of crystalline quartz, C. T. Maney and R. Hanau -318(T)

Optical refraction and Fermat's principle, Richard Schlegel-333(D) Principles of colorimetry, Donald J. Lovell-104

Rangefinder using the eyes as objectives, Harley J. Haden-165(T) Reflectance of polarized light by direct method for the optics laboratory, Peter Jowise and John Phelps-523(T)

Remark on Fermat's principle in optics, R. Schlegel-165(T) Teaching of the limit of resolution for telescopes, S. W. Harding-523(T)

Computing machines and their applications, H. D. Huskey-526(T)

Conversion charts, Haym Kruglak-321(L)

Fitting of a straight line by the method of grouping, P. G. Guest -324(L)

Mathematical physics for the potential graduate student, John Phelps-523(T)

Mathematics of elementary thermodynamics, Karl Menger-89 Mathematics of plastic flow, Peter Gibbs-526(T)

Teaching of mathematics of airflow theory, Robert L. Street-526(T) Use of curve differentials in thermodynamics, F. H. Crawford-521(D)

Mechanics (see Apparatus)

Considerations on the two-body collision problem using relativistic mechanics. Leo Seren-227(D)

Damped harmonic motion, D. A. Richards-222

Derivation of Euler's equation for the motion of an inviscid fluid, S. Corrsin-467(L)

Does pressure have direction? A. R. Stickley-322(L)

Energy density in a gravitational field, Julius Sumner Miller-237(L) Extended Bernoulli equation, James B. Kelley-202; 467(L)

Further comments on the concept of pressure, Vola P. Barton-52(L) General relation between phase and group velocities as illustrated by water waves, E. Allan Williams-394(D)

Graviton theory, W. G. Graves-522(D)

Gyroscopic action, W. H. Michener-318(T)

Impact problems, John S. Rinehart-116(L)

Larmor's theorem in quantum mechanics, R. Cade-114(L)

Note on the path of a projectile, Ivan Niven and R. T. Ellickson-516 Proof of Stokes' theorem, Earl C. Rex-165(T)

Proof of Varignon's theorem for coplanar force systems, A. W. Simon-234

Rope trick: energy vs. momentum method, Edward M. Little-

Simple pendulum, G. Preston Burns-468(L); 520(D)

Slugging out a case for the pounders, S. L. Gerhard-302

Spinning tops, R. C. Colwell-318(T)

Mesons

Birth of the meson theory, Hideki Yukawa and Chihiro Kikuchi-154 Changing status of mesons, James N. Snyder-41

Current ideas about mesons, Richard F. Humphreys-227(T)

Exchange forces, David L. Falkoff-30

Foundations of meson theory and its changing status, James N. Snyder-392(T)

Mass of the meson, L. S. Germain-524(D)

Modern physics

Allowed beta-spectrum, C. Sharp Cook and George E. Owen—453 Chronology of modern physics, A. R. Tobey—525(D)

Exchange forces, David L. Falkoff-30

Fundamentals of nuclear magnetic resonance absorption, George E. Pake, part I—438; part II—473

High precision spectroscopy of gamma-rays, B. B. Watson—393(T) Microwave methods in physics.II. Microwave absorption in paramagnetic substances, C. Kikuchi and R. D. Spence—167

Observations on annihilation photons, J. R. Beyster—165(T) Reflection of microwaves from metal plate structures, James J. Brady—391(D)

Small angle x-ray scattering, Harold Ritland-524(D)

Nuclear physics

Accelerators of nuclear particles, John S. Streib—526(T)

Angular dependence of inelastically scattered protons from Be⁹,

Kenneth E. Davis—391(D) Hydrodynamic model of radioactive decay, Harold P. Knauss— 521(D)

Laboratory experiment on alpha-particle scattering, Robert Beringer —521(D)

Nuclear magnetic resonance as an advanced laboratory experiment, Roald K. Wangsness—521(D)

Photographic emulsion in nuclear research, John Spence—462(T) Photomultiplier tubes as scintillation counters, T. Scolman and R.

R. Palmer—430(T)
Physics of light nuclei, W. A. Fowler—394(T)

Quadrupole energy of nuclei in crystals, C. Kikuchi—165(T)

Reactions leading to Fe⁵³, Mn⁵⁷, and Cr⁵⁵, M. E. Nelson and M. L. Pool—227(D)

Scattering of elementary particles by nuclei, Raymond T. Ellickson —391(D)

Studies on nuclear energy levels with fast neutrons, H. H. Barschall —535

Philosophy of science

Gradual approach to abstract reasoning, D. M. Bennett—318(T) Leibnitz's formula for perfect knowledge, P. C. Overstreet—318(T) Main philosophical considerations of space and time, Eugene C. Holmes—560

Properties of matter

Acoustic absorption and molecular theory, C. E. Adams—318(T) Anisotropy of ferromagnetic materials, Richard Kropschot—392(T) Elasticity of glass, Laurence E. Dodd—398(L)

Investigation of the properties of thin metallic films, A. H. Weber—462(T)

Magnetic susceptibility of metals and alloys, A. R. Kaufmann-228(T)

Mercury-indium molecule, Robert L. Purbrick-391(D)

Optical evaluation of molecular structure factors, Chester R. Berry -269

Paradox of minimum evaporation, N. W. Cummings-165(T)

Problems in crystal growing, Henry Kaiser—524(T)

Resumé of the problems of superconductivity, G. E. Uhlenbeck— 165(T)

Simple derivation of the formula for the mean collision number of molecules on a wall, Nils Skogen—320 Some properties of real fluids, George Woolsey—165(T)

Radio and television

Bell system of television network facilities, M. E. Strieby—523(T) Color television, Willard Geer—165(T) Directional broadcasting antennas, Dwight Loomis—392(D)

Navy radiac program and civil defense, J. Cryden—393(T) Reports, announcements, and news

A. G. Worthing memorial award-359

Abstracting and indexing services of physics interest, Dwight E. Gray and Robert S. Bray—274; 578(L)

Colloquium for college physicists-156

Current activities of the United States Office of Education, Bernard B. Watson—462(T)

Essay contest-221

Experiences at Oak Ridge, Walter L. Weeks-392(T)

Lecture experiences, E. M. Rogers-519(T)

Meetings of the Michigan Teachers of College Physics—165; 392

Meeting of the New England Section of the American Physical Society, A. G. Hill—228

Meeting of the Physics Section—American Society for Engineering Education, G. P. Brewington—526

Opportunities for graduate study in physics-49

Report of the Coulomb's Law Committee of the A. A. P. T. I. Logical standards and critical issues—1; II. Two outlines for teachers—69; Errata—88; 153; Reprints—437

Report of the New York meeting of the executive committee of AAPT, L. I. Bockstahler—393(T)

Report on the nineteenth annual meeting of the AAPT, William L. Parker—391(T)

State University of Iowa colloquium of college physicists-462

Symposium on molecular structure and spectroscopy—146 1950 summer program on "Science in General Education" at Harvard University—301

Rockets

Ramjets and turbojets, J. E. Dwinnell-526(T)

Secondary-school physics

Competitive test for high school students in Southern California, V. L. Bollman-113(L)

Methods of developing better relations with the schools, James G. Harlow—332(T)

Need for an improved program of training high school physics teachers, Gordon M. Dunning—525(D)

Stimulating interest in physics in secondary schools; the work of the California Section of the Association, David L. Soltau—332(T)

Summer courses for secondary school teachers; the General Electric science fellows at Union College, Harold E. Way—332(T)

Social and economic aspects of science (see Education, physics and

science)
Development of social physics, John Q. Stewart—239; 332(T)

Logic, history, and nuclear forces, F. W. Warburton—394(T) Physicists in the cold war, Frederick Seitz—332(T)

Science and atomic energy, Robert F. Bacher—165(T) Unfulfilled aspiration, Henry A. Rowland—387

United States and Russia, Robert D. Gregg—391(T)
Sound (see Apparatus)

Acoustic absorption and molecular theory, C. E. Adams—318(T)

Acoustics, J. C. Hubbard—393(T)
Acoustics: a neglected undergraduate subject, Robert H. Randall

—332(D)
Chladni figures or vibrational design, Frederika Blankner—337(D)
Demonstration of bests and the Doppler effect, Julius Sumner Miller

Chiagan agures or vibrational design, Frederika Biankher—337(D)
Demonstration of beats and the Doppler effect, Julius Sumner Miller
—400(L)

Determination of the speed of sound in air, Howard N. Maxwell and Clayton C. Alway—192 Method of measuring the velocity of sound, Don Graham—523(T)

Method of measuring the velocity of sound, Don Granam—323(1) Preparing rods for stroking in the Kundt's tube experiment, Bernard L. Brinker—579(L)

Preparing rods for stroking (Kundt's tube), Bernard L. Brinker, O.S.B.—526(D)

Radiation pressure in a sound wave, Robert T. Beyer—25 Resonant response of a tuning fork, Julius Summer Miller—164(L)

Some observations on Chladni figures, Julius Sumner Miller—
(534L)

Velocity of sound at ultrasonic frequencies by spark photography, W. J. Thaler, J. A. Fitzpatrick, and Laura Cheng—393(T)

Teacher training (see Education, physics and science)

Current trends in the training of college teachers, Bernard B. Watson —332(T); 553

Need for an improved program of training high school physics teachers, Gordon M. Dunning—525(D)

Preparation of college physics teachers at The Pennsylvania State College, Harold K. Schilling—549

Training of college physics teachers, Rogers D. Rusk-183

Training of college physics teachers in the graduate schools, Claude E. Buxton—332(T); Review by E. V. Briggs—430(T)
Training program in the physics department of Pennsylvania State

College, Harold K. Schilling—332(T)

What kind of teachers do the liberal arts colleges need? Harry J. Carman—332(T)

Testing, theory and techniques

Laboratory examination for general college physics, W. H. Kinsey and R. A. Rhodes II-519(D)

Scoring device, Myron S. Allen—394(D)
Objective tests, Reginald G. Lacount—238(L)

Type of examination in physics, A. D. Misener—396

Textbooks

Book review: A brief course in physics for students of home economics by Lester T. Earls, Anna M. Akeley-470

Book review: Albert Einstein: his work and its influence on our world by Leopold Infeld, Richard Schlegel-327

by Leopold Inteld, Richard Schlegel—327 Book review: Basic theories of physics: mechanics and electrodynamics by Peter Gabriel Bergmann, W. T. Payne—228

Book review: Constructive uses of atomic energy by S. C. Rothman, John I. Grebe-329

Book review: Cosmological theory by G. C. McVittie, Richard Schlegel ---531

Book review: Crystals and x-rays by Kathleen Lonsdale, Jesse W. M. Du Mond—325

Book review: Dipole moments by R. J. W. LeFèvre, W. T. Payne—532 Book review: Electrical resistance strain gauges by W. B. Dobie and P. C. G. Isaac, Grant O. Gale—117

Book review: Electronics: experimental techniques by W. C. Elmore and Matthew L. Sands, Lucio M. Vallese—229

Book review: Elementary modern physics by Gordon Ferrie Hull, Erna M. J. Herrey—231

Book review: Elementary pile theory by Harry Soodak and Edward C. Campbell, H. C. Schweinler—403

Book review: From Euclid to Eddington by Sir Edmund Whittaker, Peter G. Bergmann—330

Book review: Giant brains by Edmund C. Berkeley, Charles P. Wells -230

Book review: How to solve problems in general physics by John Harty and Alfred H. Weber, G. P. Brewington—403

Book review: How to study physics by Seville Chapman, W. W. McCormick—584

Book review: Introduction to atomic physics by S. Tolansky, Lawrence M. Langer—231

Book review: Introduction to statistical mechanics by Ronald W. Gurney, David M. Dennison—53

Book review: Introduction to theoretical and experimental optics by Joseph Valasek, R. T. Ellickson—230

Book review: Introduction to theoretical physics by Max Planck, David L. Falkoff—527

Book review: Joseph Henry, his life and his work by Thomas Coulson, Walter C. Michels-528

Book review: Live with lightning by Mitchell Wilson, Louis N. Ridenour—470

Book review: Matrix analysis of electric networks by P. LeCorbeiller, W. J. Cunningham—329

Book review: Meaning of relativity by Albert Einstein, A. H. Taub —403
Book review: Measurements of radioactivity by Leon F. Curtis, J. C.

Lec-584

Rook review: Out of ma later wears by Albert Finetain A A Knowl

Book review: Out of my later years by Albert Einstein, A. A. Knowlton-469

Book review: Physical constants by W. H. J. Childs, R. T. Harling -531

Book review: Physics by Oscar M. Stewart and Newell S. Gingrich, Reginald T. Harling-529

Book review: Science and civilization by Robert C. Stauffer, ed., William S. Webb—327

Book review: Scientific autobiography and other papers by Max Planck, Rogers D. Rusk-117

Book review: Some early tools of America science by I. Bernard Cohen, E. C. Watson—576

Book review: The crystalline state by Sir Lawrence Bragg, S. S. Sidhu—330

Book review: The cyclotron by W. B. Mann, W. C. Parkinson—528 Book review: The general principles of the quantum theory by G. Temple, W. T. Payne—584 Book review: The metre-kilogram-second system of electrical units by

R. K. Sas and F. B. Pidduck, W. T. Payne—531 Book review: Trilinear chart of nuclear species by William H. Sullivan,

Book review: Irisinear chart of nuclear species by William H. Sullivan, Chihiro Kikuchi—403

Book review: Vector and tensor analysis by Harry Lass, Marshall J.

Walker—583
Rook raviaw: Il winersity obvices by F. W. Sears and M. W. Zemansky.

Book review: University physics by F. W. Sears and M. W. Zemansky, I. Walerstein—530

Criticism of the contemporary physics textbook, A. V. Bushkovitch —312; 336(D)

Inferences in some ancient books (the Bible) of present-day physics, Maurice T. Brackbill—393(T)

Taylor memorial manual of advanced undergraduate laboratory experiments, T. B. Brown—519(T)

Textbook errors on thermocouples, A. G. Samuelson-557

Tribulations of a textbook writer, O. Blackwood-318(T)

Units, dimensions and terminology

Dimensional structure of the electromagnetic field, Gustave R. Holm -509

Dimensional systems, Otis Wolfe-318(T)

Electric and gravitational proportionality constants, John A. Eldridge—579(L)

Nomenclature policy in radiometry and photometry, A. G. Worthing —162

Slugging out a case for the pounders, S. L. Gerhard-302

Visual materials and methods

Action vs. reaction-54

Atomic energy—430(T)

Atomic physics-332(T)

Calcite crystal model, F. E. Christensen-161

Confetti and turbulence, Earl W. Thomson-39

Crystal clear (color film)-519(T)

Device for showing vectors in space, Julius Sumner Miller—115(L) Discussion of visual education in general physics, F. T. Hawley—

165(T)
Illustrated definitions, Robert S. Shaw—337(D)

Leslie's cube, Tyndall apparatus, waves in string, glass and rubber rods, electroscope, electrolysis—332(T)

More paper for physics teachers, Stanley C. Pearson-394(D)

Oscilloscope display of damped oscillation curves, Charles Willamson —318(T)